

### Description

The AD4B adapter provides a simple plug-in method for connecting a single-ended or differential quadrature encoder directly to an RS-232 serial com port. One end of the AD4B plugs into a standard serial port, while the other end plugs into a quadrature encoder. A quadrature counter (LFLS7166) inside the AD4B keeps track of encoder position, while a microprocessor provides a serial interface allowing the user to query the counter for encoder position. A Windows library is provided to give the user simple access to AD4B functions, and a sample program in Visual Basic provides a template for the user's custom application. The encoder interface IC used in this product can be purchased separately. See the LFLS7166 page for complete information.

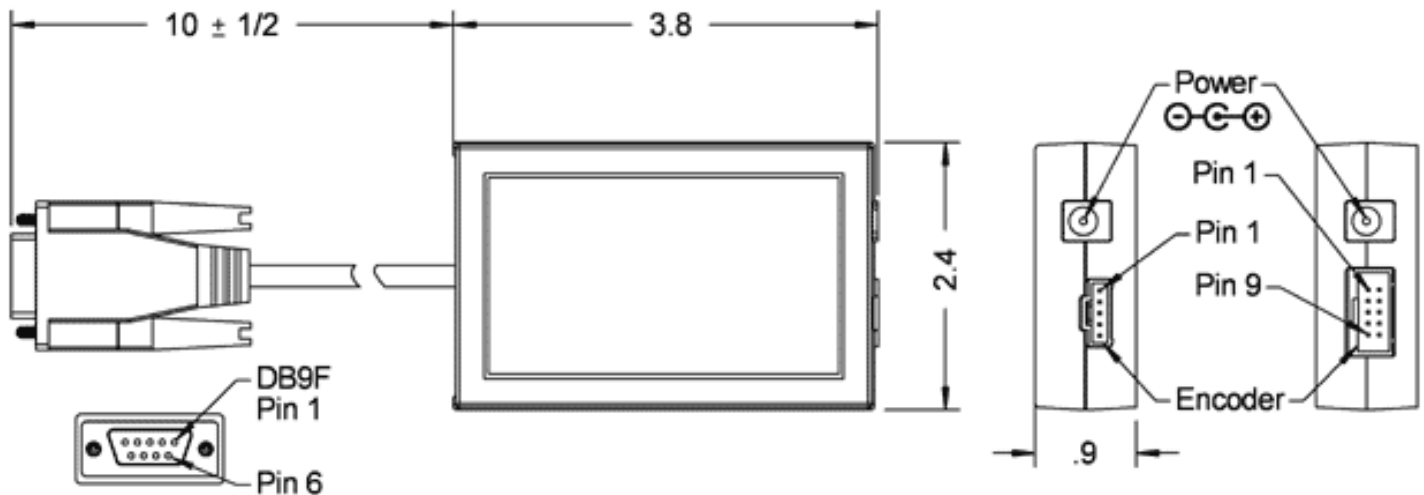
The AD4B communicates with a host computer using an 8-bit binary format. Although not readable as ASCII text, the binary format is fast and space efficient. The equipment connected to an AD4B must support 8-bit data transfer at a baud rate between 1200 and 115k baud.



### Software

- ▶ [www.usdigital.com/support/software/ad4](http://www.usdigital.com/support/software/ad4)
- ▶ [www.usdigital.com/assets/USDProducts.zip](http://www.usdigital.com/assets/USDProducts.zip) (.zip file with installer)

### Mechanical Drawing



### Electrical

Parameter	Min.	Typ.	Max.	Units
Supply Voltage (into AD4B)	6.0	-	16	Volts
Supply Current (without encoder)	-	-	65	mA
RS232 Output High (RXD)	5.0	8.0	-	Volts

Parameter	Min.	Typ.	Max.	Units
RS232 Output Low (RXD)	-	-8.0	-5.0	Volts
RS232 Input High (TXD)	3.5	-	15	Volts
RS232 Input Low (TXD)	-15	-	0.4	Volts
Current to Encoder	-	-	120	mA
Voltage to Encoder	4.8	5.0	5.25	Volts
Quadrature Input Frequency	0	-	1.2	MHz
Quadrature Encoder Inputs - Logic Low	-0.6	0.4	1.8	Volts
Quadrature Encoder Inputs - Logic High	2.0	3.0	5.7	Volts

- Specifications apply over entire operating temperature range.
- Typical values are specified at Vcc= 12V and 25C.

### Absolute Maximum Ratings

Parameter	Min.	Max.	Units
Storage Temperature	-40	100	C
Operating Temperature	0	70	C
Humidity (non-condensing)	0	95	%
120VAC Power Supply Input Power	-	6	Watts

### Pin-outs

#### Single-ended (S-interface):

Pin	Description
1	Ground
2	Index
3	A channel
4	+5VDC power
5	B channel

#### Differential (D-interface):

Pin	Description
1	Ground
2	Ground

Pin	Description
3	Index-
4	Index+
5	A- channel
6	A+ channel
7	+5VDC power
8	+5VDC power
9	B- channel
10	B+ channel

 **Included Accessories**

**Included Accessories**

PS-12 Power supply

Software

### Ordering Information

AD4B -

Input

D = *Differential*

#### Notes

- US Digital warrants its products against defects in materials and workmanship for two years. See complete warranty for details.